

WHAT IS CLAIMED IS:

- 5 1. A resin molded brushless direct current (BLDC) motor comprising:
a rotor assembly including a rotor and a rotating shaft, the rotor having a plurality of magnets for creating a magnetic field;
a stator assembly including a plurality of multi-phase coils, the plurality of multi-phase coils creating an electric field for generating a torque in cooperation with the magnetic field created by the magnets of the rotor;
an injection molded housing encasing the stator assembly;
a control board disposed on an outer portion of the housing, the control board including a drive circuit for detecting a position of the rotor and sequentially applying conducting signals to the multi-phase coils of the stator assembly; and
connection means for electrically connecting the control board to the multi-phase coils of the stator assembly,
wherein the housing is injection molded with the stator assembly therein.

15 2. The resin molded BLDC motor as claimed in claim 1, wherein the outer portion of the housing has a depression formed therein, the control board being disposed in the depression.

20 3. The resin molded BLDC motor as claimed in claim 1, further comprising a pair of bearings and a pair of bearing covers, the bearings rotatably supporting the rotating shaft of the rotor assembly, each bearing cover being press-fit onto an end of the housing so as to support the respective bearing, one of bearing covers having an extended portion

extending radially outward, the bearing cover with the extended portion preventing the control board from being exposed.

4. The resin molded BLDC motor as claimed in claim 1, wherein the connection
5 means comprises:

a plurality of connection pins coupled to respective multi-phase coils of the stator assembly and projecting from the housing; and

a plurality of connectors formed on the control board, each of the connectors corresponding to and mating with a respective connection pin.

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5. A method of manufacturing a resin molded brushless direct current motor comprising:

assembling a stator assembly;

15 forming a housing to encapsulate the stator assembly, the housing being injection molded using a resin and a mold, the stator assembly being placed in the mold;

electrically connecting a control board to the stator assembly;

assembling a rotor assembly to the housing; and

press-fitting a plurality of bearing covers into the ends of the housing.

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6. The method as claimed in claim 5, wherein assembling the stator assembly comprises:

forming a stator by stacking a plurality of stator cores, the stator including a

plurality of slots formed therein;

inserting a plurality of insulators into the slots of the stator;

winding a plurality of multi-phase coils on the stator through the slots; and

connecting connection pins to the multi-phase coils, respectively, which are

5 wound on the stator through the slots.

7. The method as claimed in claim 5, wherein forming the housing includes forming a depression in an outer portion of the housing, and wherein the control board is disposed in the depression of the housing.